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GENESEE FARMER.

SATURDAY, JULY 15, 1837.

Commercial Statistics.

The statistics of commerce independent of agriculture, are to the farmer usually of little interest; but in this country trade is so intimately connected with agriculture, and the state of the country has had such an operation on both, that a slight statement of our exports and imports cannot be otherwise than interesting, and may be valuable for future reference: Our exports are made up of the produce of our fields, with a small addition from our manufactories; our imports are the products of every country and clime, and many of the heaviest items it will be seen are such as we might and should provide for ourselves, without depending on the labor or capital of others. We have gathered the materials for the following table, principally from the Report just issued from the press, on the Commerce and Navigation of the United States, and have partially added those of 1825 to show the increase that has taken place in certain articles of imports, in ten years.

	1827.	1836.
Imports, Total.	$79,484,068	189,980,035
Exports, Total.	82,324,827	128,663,040
Articles Imported.	1825.	1836.
Gold and Silver,	6,150,765	13,400,506
Teas,	3,720,935	5,331,486
Coffee, in value,	5,250,828	9,653,053
do. in quantity,	lbs. 45,190,630	93,790,507
Sugar,	lbs. 64,480,041	181,243,547
Silk Goods,	$10 271,527	22,079,002
Linens,	3,645,125	8,275,813
Silk and Worsted Goods,	625,204	3,171,023
Broadcloths,	5,374,562	8,926,282
Printed Cotton Goods,	7,709,830	12,192,980
Articles Exported.	1827.	1836
Cotton,	29,000,000	71,000,000
Whale Fishery,	588,000	1,698,000
In Tobacco, an increase of		3,500,000
Cotton Manufactures do.		1,500,000
Produce of forests do.		2,000,000
Flour and Pork, a falling off of.		7,500,000

Thus it seems that the imports for the past year have exceeded the exports in the enormous sum of $61,316,995; or in other words we have run in debt to foreign nations to that amount. A large part of these goods for which we have thus pledged our credit, we had much better be without, and another large part we might produce at home.

An important lesson may be derived from such comparative statements. We may discover where our weak points as a nation are, and to what commercial or agricultural error the process of correction should first be applied. Thus while our importation of silks and broadcloths has increased from fifteen millions to thirty-one millions, our exports of flour and pork have decreased in the same time about eight millions; a plain proof that we have been more anxious to buy than to sell; to indulge ourselves in luxuries, rather than cultivate the soil. No one can reasonably doubt, that if the attention of the people of this country had been properly directed, and their efforts suitably encouraged for the past ten years, instead now of being in debt in a single year thirty millions for silks and broadcloths, we might in addition to manufacturing for ourselves been furnishing these articles for exportation.

Sugar is another item of which we have imported largely, when we ought at least to make what is required for our own use. 195 millions of pounds, including brown and white, in a single year, at an expense of some fifteen millions of dollars; when the valleys of the Connecticut and the Hudson might furnish beet sugar in sufficient quantities to close our ports against all foreign importations of that necessary article. The amount of sugar imported last year was however larger than usual, owing to there being little or no maple sugar made, while this year 70 millions have been produced from this source. There was hopes at one time, that Florida and Louisiana would supply the United States with sugar, but the mania for raising cotton had taken so deep root, that sugar has been neglected, and the present fall of cotton has demonstrated that those who cultivated the cane as well as cotton, were the most wise.

It appears we imported 13 millions of printed and colored cotton goods, yet it must be evident that we can by a proper direction of our resources and our ingenuity, save this sum to the nation. We all remember when the coarse East India cottons held possession of the market, and the idea of our manufacturing any goods that could compete with even these vile fabrics, was scouted by thousands in our country; and we also know how these predictions have been falsified in not only shutting out India muslins, but all plain British cottons, by our superior manufactures.

The increase in the importations of coffee and tea are the natural results of an increase of population and wealth; but we are inclined to place much of the addition made annually to the quantity of these articles used to the fact that they are in a considerable degree supplanting ardent spirits in the public house, and in the social circle. It is indeed a gratifying truth, that while we have in every thing else increased our importations, in the article of ardent spirits both imported and home manufactured, there has in ten years been a falling off in quantity of about one half; a fact that speaks volumes in favor of the temperance effort.

As the financial year of the government closes with September, the introduction of foreign grain had not commenced at the period embraced by the report; but the falling off in the agricultural produce of the country had been clearly marked in the reduced exports. The report for the present year will exhibit a still greater reduction of agricultural exports, and an amount of foreign wheat imported, which should fill our farmers with shame and regret. It is the province of common sense to learn wisdom from the past; and if the frightful revulsions which have taken place in our commerce and trade, do not drive us back on our own resources, do not compel us to greater agricultural exertions, more prudence and economy in our ways and means, and check the disorganizing spirit of overtrading and speculation among us, then, so far as experience for us is concerned it may well be said, we have lived in vain.

Importation of Wheat.

AT NEW-YORK.—From a table which we find in the New York Farmer, it appears that the whole amount of wheat imported into the city of New-York,

	Bushels.
In the year 1835, was	18,200
In the year 1836,	493,700
In 1837, up to 19th April,	854,000
	1,365 900

AT ROCHESTER.—There was imported from Canada to this city,

	Bushels.
In the year 1835,	95,000
In the year 1836,	223,000
To this time in 1837, only about	10,000
	328,000

Besides these, considerable quantities have been received at other cities on the seaboard, and more or less must have reached Oswego, Ogdensburgh, &c. from Canada.

The 1,365,900 bushels, above enumerated as received at New-York, was imported from the following countries:

	Bushels.		Bushels.
England,	552,500	France,	35,500
Germany,	393,600	Austria,	10,100
Holland,	170,800	Prussia,	8,000
Italy,	153,000	Sicily,	5,400
Russia,	39 600	Denmark,	1,000

Shade Trees.

It was Lord Bacon, we believe, who said that "a tree in full leaf was a more majestic object than a king in his coronation robes," and as he was a man competent in every respect to form a correct opinion of the matter, he may undoubtedly be considered right. We, untilled plebian farmers, whose optics have never expanded at the sight of a throne or a crown, or looked on that animated piece of clay called a King, can perhaps form but a faint idea of the splendors of royalty, but we do know there is nothing in nature that combines more grace and beauty, than the wide spreading foliage of a majestic tree in the "leafy month of June." Gentle or simple, savage or civilized, all men, unless those in whom every trace of taste and sentiment is extinct, look on trees, whether in their native forests, or growing under the culturing hand of man, with a feeling of admiration and delight. The freedom and ease with which their tapering and beautifully proportioned columns spring into the air—the regularity and finely adjusted curves of their arching branches—the broad and overshadowing roof formed by the intermingling masses of foliage, form a whole to which the most costly piles of human architecture are mean, and which constitutes a temple worthy of his worship who designed and created such examples of surpassing beauty.

We have long considered it as wonderful, that while this feeling of admiration of trees is so universal, it should have had so little influence in inducing men to assist nature in arranging and perpetuating this beauty. We seem to take a pleasure in destroying the last remnants of our once mighty forests, and as if their destiny was connected with that of the red man who once dwelt beneath their branches, with one hand we are pushing him beyond the bounds of civilization, and with the other dashing to the earth the dark woods that furnished him shelter and food. We lay the axe to the root of our magnificent forest monarchs with as little reluctance as if they were the growth of a year, and seem to forget that we in an hour can undo what nature requires centuries to perform; we seem to imagine that the world will end with ourselves, and that there will be no coming generations to require timber and fuel, and objects of grandeur and beauty to admire. That such a feeling should prevail among those who, like most of the farmers in our new countries, have been taught to consider the trees which covered their farms a nuisance, and the destroying of them a blessing, is not so passing strange; but that men, whose life has been spent in villages or cities, should, when domiciliated in the country, be so willing to cut down, and so unwilling to plant, is truly wonderful.

A man would almost as soon plead guilty to insanity, as confess to a non perception of the beauties of spring, or a want of pleasure in highly cultivated grounds, shady avenues, or leafy whispering groves; yet because a woodland, or an avenue, or a cool shady walk, will not, like Jonah's gourd, spring up in a night, every one deems himself privileged to defer planting trees; and hence our naked dwellings and unprotected fields—our villages without coverts or shrubbery, and our cities with their ranges of brick and stone, but with their streets and squares unplanted and unornamented. There is a mistaken notion prevalent on the time it will take a tree to become useful or ornamental. There are few young men who, if they would plant a tree, or a number of trees, would not live to take a pleasure in the work of their own hands, and find in the beauty they have imparted to their premises, if not in the increased amplitude of their purses, a full compensation.

We have most fortunately trees, the growth of our climate and our forests, not exceeded in beauty by any exotic or imported ones—trees which are already acclimated, and can readily be procured in any quantity, without the planter's incurring but a small share of the risk usually encountered where it is necessary to bring trees from abroad. To be convinced of this, one only need to view the majestic collonade of weeping elms of the Mall at Boston—the rows of the same tree that overshadow the delightful streets of New Haven—or the heavy masses of rich foliage and sweet scented flowers that, from double ranges of the linden tree, wave over the marble steps that surround Washington Square in the city of brotherly love. The maple too is another of our forest trees that never fails to arrest attention wherever it is used for ornamental purposes, and every one must be pleased to know that the merits of this beautiful tree are beginning to be appreciated, and the numbers already planted in some cities and villages, argues well for their appearance at no distant day. We venture to say that no person of taste ever passed through the village of Cortland, in this state, without pausing to admire the beautiful ranges of maple that encircle the mansion and grounds of Gen. Randall, affording as the view does a decisive proof of what individual enterprise may perform towards the embellishment of our villages.

It is to individuals that we must look for such examples in improving our tastes, and promoting our most rational of pleasures—to men who can look forward to benefits beyond to day, and who, if good is but done, are content to be forgotten. The hand that planted the elms of the Mall at Boston is now dust, but the stranger and the citizen, the educated man and the beautiful woman, are alike there to enjoy the pleasure individual spirit and enterprise, combined with patriotic forethought, has furnished them. We can only regret that such examples are not more common, and that benefits so permanent are not oftener conferred on the public.

Domestic Economy.

White Walnut Pickles.—Make a brine of salt and water in the proportion of a pound of salt to a gallon of water; put the walnuts in this for a week; stick a fork through them in half a dozen places; this will allow the pickle to penetrate, and they will be much softer and of better flavor and ready much sooner for use; put them into a bell-mettle kettle, with such brine and give them a gentle simmer; put them on a dish in the air to drain until they turn black; this may take a day or two. Put them into a stone jar; have your pickle prepared in the proportion of a quart of strong vinegar, one ounce of black pepper, same of ginger, some salt, and half a drachm of cayenne pepper, if you have it; make it quite hot, and then pour it on your walnuts, and then cover them very tight with leather on the top. The walnuts should be got when soft enough to pierce them with a pin.

Pork Pie.—Make a common pie crust; put it in an oven or pie-pan; take the small ends of the chine-bone, cut it into small pieces; beat them a little; season them with pepper and salt and fill your pie; put on the top and close it, and pinch it round the edge, and bake it two hours with paper over to prevent the crust from burning; there should be some gravy in it when done.

Veal and *Lamb Pie* can be made in the same way, the best end of the neck, and the meat off of the chine-bone taken away. The yolk of 3 eggs is an improvement to the veal pie.

Parsley.—To preserve parsley for the seasoning of meats, &c., ler it be gathered on a dry day, and immediately put it in a tin pan, and place it close to a large fire; it will then soon become brittle when it may be rubbed fine and put into glass bottles for use.

To make Rusk and Dough-nuts.—One pint of new milk, one pint of brown sugar, and three-quarters of a pound of butter melted in the milk until it is quite hot; beat the sugar and eggs together until they appear quite light, then add the milk and butter, with as much flour as will make a stiff batter; beat it well, then put in one spoonful of good hop-yeast; let it stand all night in a crock; if raied good in the morning, add as much flour as will make it into dough; put it back into the crock and let it raise a second time; then make it out into small cakes and put them in an oven a little warm, not crowded, and let them raise the third time; then heat your lid and oven as your judgment may dictate, and bake them a pine brown. You can take part of the kough and cut it into any shape you fancy, and fry them in some nice hot lard of a light brown.—*Ten. Farmer.*

Geological Survey of Ohio.

Under the law of the last Session of the Legislature, authorizing the Governor to create a Geological Corps, to make a full and thorough survey of the whole State, the following gentlemen have been appointed:

Professor W. W. Mather, of New York, Principal Geologist.

Dr. S. P. Hildreth, of Ohio, 1st assistant.

Dr. J. P. Kirtland, of Ohio, 2d do.

Dr. John Lock, of Ohio, 3d do.

Professor C. Briggs Jr., of New York, 4th assistant.

Col. J. C. Whittlesey, of Ohio, Topographical Surveyor and Draftsman.

The result of the labors of this corps will be looked to with intense interest, and each report will be sought after with great impatience. We are sorry that we have not been able to obtain a more minute history of the organization and arrangement of the duties of each division of this corps. We consider this one of the most important steps ever taken in Ohio, to ascertain her true resources and mineral wealth.

Of the gentlemen appointed we cannot speak from personal acquaintance, with the exception of Dr. Kirtland—and of him we must be permitted to speak in terms of the highest praise. He is an ornament to his State, and every way fitted to the duties devolving upon him. We have no reason to believe that the other gentlemen are less qualified for their duties.—*Ohio Farmer.*

From the New England Farmer.

Mr. Editor:—If you please you may publish the following table, containing observations of the times that Apple trees have been noticed to be in *full blossom*, in Mansfield, County of Bristol, Ms., from 1798, to the present year, inclusive, making 40 years.

Isaac Stearns, Jr.

Mansfield, May 1837.

	Day of the Month.		Day of the Month.
1798	May 13	1818	May 29
1799	" 19	1819	" 25
1800	" 17	1820	" 17
1801	" 17	1821	" 27
1802	" 26	1822	" 15
1803	" 22	1823	" 23
1804	" 22	1824	" 19
1805	" 14	1825	" 15
1806	" 27	1826	" 15
1807	" 27	1827	" 17
1808	" 18	1828	" 17
1809	" 25	1829	" 21
1810	" 19	1830	" 9
1811	" 15	1831	" 14
1812	June 2	1832	" 31
1813	May 25	1833	" 12
1814	" 14	1834	" 20
1815	" 27	1835	" 29
1816	" 28	1836	" 21
1817	" 23	1837	" 30

Observations.—June 2, 1812, and May 9, 1830, are the two extremes, the mean of which is May 21st. The mean annual blossoming of the whole 40 years, is May 21st. The first ten years, from 1798 to 1897, including the average annual blossoming, is May 20th; but the second ten years, from 1808 to 1817, inclusive, is May 23d; the third ten years, from 1818 to 1827, inclusive, is May 20th; the last 10 years, from 1828 to the present year 1837, is also May 20th.

The time in the preceding table was taken when the apple tree blossoms were out the fullest, and the trees appeared the whitest, and some of the petals began to blow off by the wind; except the Russet and some late kinds, which expand their blossoms more gradually and come out later. I. S.

On the 28th (not the 1st) April, a hill 100 feet high at Koeslin in Prussia, on the Baltic sea, sunk suddenly into the earth, leaving an abyss 200 feet wide.

Fat Animals and Large Crops, result alike from an abundance of Proper Food.

The profits of crops, as well as of cattle, depend mainly upon the return they make for the food and labor bestowed upon them. The man who grows a hundred bushels of corn, or makes a hundred pounds of meat, with the same means and labor that his neighbor expends to obtain fifty bushels, or fifty pounds, has a manifest advantage; and while the latter merely lives, the former, if prudent, must grow rich. He gains the entire value of the extra fifty bushels, or fifty pounds. This disparity in the profits of agricultural labor and expenditure is not a visionary speculation—it is matter of fact, which is seen verified in almost every town. We see one farmer raise 80 bushels of corn on an acre of land, with the same labor, but with more foresight in keeping his land in good tilth, and feeding better his crop, that his neighbor employs upon an acre, and who does not get 40 or even 30 bushels. This difference results from the manner of feeding and tending the crop.

If the farmer, for the convenience of transportation to market, wishes to convert his grain, and his forage, and his roots, and his apples, into beef and pork, what is his judicious course of proceeding? Does he dole these out to his cattle and his hogs in stinted parcels, just sufficient to sustain life, or to keep them in ordinary plight? No. He knows that a given quantity of food is necessary to keep them as they are, and that the more, beyond this given quantity, which they can transform into meat, and the sooner they do it, the greater the profit. To illustrate our remark: suppose a hog requires twenty bushels of grain to keep him in plight for two years, and that he can manufacture fifteen bushels of this grain into pork in six months, if duly prepared and fed to him.—In the one case, the owner has his lean hog at the end of two years, for his twenty bushels of grain; in the other, he has converted fifteen bushels of this grain into pork—into money—at the end of six months, saved the keep of the hog for eighteen months, and twice or thrice turned his capital to profit. Time is money, in these as in all other things appertaining to the farm. The proposition may be thus stated—that which will barely *keep* a hog two years, will *fatten* him well in six months. Therefore, the sooner we can convert our grain and forage into meat, with due regard to the health of the animal, and the true economy of food, the greater will be the profits which accure. The remark applies to milk as well as to meat. These facts teach us, to *keep no more stock than we can keep well;* and that, *one animal, kept well, is of more profit than two animals that are but half fed.*

If we apply these rules to our crops, they instruct us to *till no more land than we can till well,* and to *plant and sow no more than we can feed well;* for the fact must not be lost sight of, that our crops, like our cattle, live and fatten upon vegetable matters. One hundred bushels of corn, or four hundred bushels of potatoes, may be grown upon four acres of land badly fed and badly tended; and this is probably about a fair average of these crops; while the same amount of corn or potatoes may be grown on *one* acre, if the crop is well fed and tended. The product being the same from the one acre as from the four acres, and the expense but a trifle, if any, more than one quarter as much, it results, that if the crop on the four acres pays for labor and charges, three-fourths of the crop on the one acre is nett gain to the cultivator. Estimating the charges, at $25 the acre, the price of corn at $1, and potatoes at 25 cts. the well cultivated acre affords a profit, over and above the charges, of $75—while the crop on the four acres gives not a cent of profit, but merely pays the charges upon it. Though not in this degree, the same disparity exists in all the operations of husbandry; and the primary cause of the difference consists in feeding well, or feeding ill, the crops, as well as the cattle, which are the source of the farmer's profit.

Let us continue the analogy a little farther. Every one knows, that to have good cattle, it is necessary not only to have an abundance of food, but that much, in the economy of the fattening process, depends upon having it of suitable quality, and properly fed out. The grasses should be sweet and nutritious, the hay well cured, and the grain and roots broken or cooked. The man who should leave his

cattle food exposed to waste, till it had lost half of its value, would hardly merit the name of farmer.—Every one would say, *that man is going down hill.* Cattle, say they, must eat, and if we dont feed them, they will give us neither meat, milk nor wool. And so must plants eat—they have mouths, and elaborating processes, and transform dung into grain, roots and herbage, with as much certainty and profit, as cattle convert grain, into meat, milk, &c. Hence the farmer who disregards dung, or suffers it to waste in his yards, is as reckless of his true interest as he would be to neglect or waste his grain, hay and roots. Dung is the basis of all good husbandry. DUNG FEEDS THE CROPS; CROPS FEED THE CATTLE; CATTLE MAKE DUNG. This is truly the farmer's endless chain. Not a link of it should be broken, or be suffered to corrode, by indolence or want of use.—Once broken, and the power it imparts is lost. Preserved, and kept bright by use, it becomes changed into gold. It is to the farmer the true philosopher's stone. The man who wastes the means of perpetuating fertility in his soil, may be likened to the unfortunate sons of opulence, who waste, in habits of indolence and dissipation, the hard-earned patrimony of their fathers.—*Cultivator.*

Advantages of well Cultivated Farms.

The last season, those who tilled land under a high state of cultivation, were well remunerated for labor expended, while those who tilled worn out farms, scarcely raised the amount of bread stuff, expended during the summer. It is time that more attention was paid to increasing the fertility of the soil, and we are glad to see that the H. F.& H. Agricultural Society have offered a premium of $15 on the greatest quantity of good manure, that shall be made from the first day of June, 1837, to June 1st 1838. A written description of the making will be required, and an opinion of the best and least expensive mode of increasing the same, regard being had to the number and kind of animals kept in the yard, stables, and pens.

We find a few (and too few) of our farmers awake to the subject, and they have resolved to till less land, believing that they can get larger crops; at any rate they are satisfied that a crop will be more sure on *good* land than on poor. A gentleman in this vicinity told us the other day, that he had commenced improving his farm in earnest. He had raised the value of his farm, and greatly increased the produce by ditching. He has a spout at his back door into which his soap suds &c. are poured, and carried under ground to a pen or yard a few rods from his house. This pen is so constructed that he can drive through it with a cart, and here he deposits turf, muck, damaged hay and straw, which a good yard of porkers manufacture into first rate manure. In this way he has doubled the produce of his farm. Much may be done toward improving land by a rotation of crops.

The celebrated naturalist Mirbel, has lately given the following explanations of the phenomena that render rotation of crops advisable. "Plants require other elements of assimilation, and cannot thrive without them. For instance there is silex in the cane, and there is lime in certain plants, (say wheat,) whose organization could not be completed without it. The quantity of any such foreign ingredient in a plant is generally small; still the necessity for it may be presumed as absolute. Plants cannot be constituted unless all the materials they require be furnished to them; and indeed the same observations will apply to animals; deprive a hen of lime, her eggs will have no shell; deprive the earth of its salts, such as form potash, soda, or in combination with minerals, lime, gypsum, &c. and you destroy its productive power. The smallest quantity of gypsum will have a remarkable effect on clover; and the effects of the other combinations are scarcely less visible on other varieties of plants. But the formation of these salts, or materials, exciting and sustaining the growth of the plants, when spontaneous, is slow, and the result of regular chemical changes which have been at work for centuries; and when the natural and limited supply is exhausted as it soon must be, if the successive crops of the same kind are forced upon the soil, the plants will look yellow and shabby, each year renders it more worthless, until finally not enough will grow to repay cultivation. Let the crop perish where it grew, the earth will re-assume the minerals and salts extracted from it during such growth, and the same plants will flourish indefinitely."—*Northampton Farmer.*

"That won't make the Pot Boil."

"That won't make the pot boil," said an old snug-fisted farmer, who had served a long apprenticeship in closely counting his dollars and cents,—as he drove his rawboned horse up to the neat new cottage of one of his thriving neighbors, whose sons were that moment engaged in painting a neat fence which they had just finished in front of his house. "For one, I likes to look out for the stone wall round my turnep yard, but I never troubles myself about gingerbread work about the homestead, and your daubing with white paint. I'd rather see a good wood pile in my yard, and a good barn full of hay, than all these little *fineries* you could fix in a month."

The old gentleman said several other very *characteristic* things, and then rode on his way,—and was presently brought within sight of his own more unadorned dwelling; the duties pertaining to which he and his *hired man* had performed for the last several years,—while his three sons, unwilling to drudge on in his uninteresting and tasteless way of living, had lett him to go to the city, where they could perhaps have a more successful business, or perhaps fail by and by for a million of dollars.

This is but a picture, but is there not some truth in it? Have not many of our farmers and laboring men been accustomed to look out so sharply for the *main chance*, as to forget that they were laying the foundation for loneliness in their old age? It cannot be disputed that there has been a great disposition among farmer's sons to go from home, and engage 'weal or for woe,' in other scenes and other labors. We cannot help thinking that a part of the difficulty has originated in that sordid love of money, at the expense of every thing like good taste, which has held out but few attractions to the young to become farmers, except where necessity or parental authority has compelled it.

We wish the time might come when there could be more time and money given by farmers to the beautifying of their places. A neat farm house with a few simple ornaments, is always spoken of by the passer by, with interest and delight. If more such places could greet the eye of the traveler as he passes through our farming districts, there would be a greater willingness to engage in the business, among those who now bend their talents to other occupations.

The expense of such little improvements is but very trifling,—and the time may be saved in a thousand of those listless hours which are often spent to no particular purpose. We repeat again with new emphasis, because with new conviction of its truth, what we said a year ago—that the man especially a farmer, who plants a honeysuckle by his door, who paints or even whitewashes his fences, who plants a tree by the roadside, or ornaments his garden, does much toward the growth of *patriotism*—as well as toward continuing from motives of cheerfulness and enjoyment, his posterity in the *business* from which he has gained his living—on the *spot* which he in his life has rendered dear, and in his death has rendered more so, by entrusting to it his slumbering dust. Children grow up in the love of home under such circumstances, and their attachments are not easily eradicated; but for the want of proper attention, they will seek a separate home and a separate interest. In the end then it is not true, that such efforts "do not make the pot boil."—*Essex Register.*

Root Culture.

The root, and particularly the turnep culture, which has been extolled as the basis of improved husbandry in Great Britain, is rapidly extending among us; and we confidently anticipate from it the best practical results. Five years ago there was not probably two hundred pounds of ruta baga seed sown in the state; this year tons of this seed have been sown; and the culture of mangold wurtzel and carrots, has been also greatly extended. One seedsman has imported 26 cwt. of ruta baga seed, and this probably has not been more than a quarter, or a third that has been sown. The supply has become exhausted, from Baltimore to Boston, and yet the demand has not been supplied. Our neighbor, Thorburn, has sold this season 1,500 lbs. ruta baga seed; 140 lbs. carrot do.; 100 lbs. parsnip do.; and 150 lbs. mangold wurtzel do.; and, as indicating the extended culture of roots, and the advance of agricultural improvement, we add, that he has also retailed seventy cultivators; eighty drill-barrows; and seventy-five of Green's straw-cutters. We record these facts as affording, in our mind, substantial proofs of a propitious change, and of the efforts to improve, which are now being manifested in our agricultural community. And from the spirit of inquiry which is abroad, and the general circulation of agricultural periodicals, we hazard little in saying, that the rising generation will be better farmers, and more enlightened men, than their fathers have been. Let every young farmer ponder upon these facts, and to stimulate him to honorable exertion, let him remember, that he who aims to excel will at least attain mediocrity; while he who aims to mediocrity will generally fall short of it. Cultivate the mind, as the sure means of increasing the profits of the hands. —*Cultivator.*

The BEE MOTH is one of the most troublesome objects bees have to encounter. We examined a hive the other day, and had all the operations of this insect explained and pointed out. Just at twilight, in summer evenings, little white millers are seen fluttering about the hives. They lay eggs just inside of the openings, and in the spring they hatch out and become the moth, resembling the maggots found in defective apples. Like silk worms, they spin webs about the hive and close up the little cells of the bees, and play the duce with the comb. They ultimately destroy the bees as well as eat up the honey. After having accomplished their purpose, they wind themselves up in a sort of Cocoon, and in the spring, the chrysalis is changed, and they become the villainous mischievous little millers, which buzz about ones evening light, and singe their foolish wings in the blaze of the candle. Well, now it has troubled people to know how to rid themselves of the Bee Moth. The most summary, and no doubt the most successful way is to *kill them*, but how to do it is the question. The best method, we are told and in fact saw it demonstrated, is every evening carefully to raise the lower edge of the hive and the moth will be found crawling upon the bottom board. Then it is that he should have his quietus given him with a "bare bodkin." This practiced for a few weeks at the opening of the season, and the moth will be effectually extirpated from the hive. Just try it.—*Northampton Cour.*

SNAKE FIGHT.—John Foster, who resides near the Washington Print Works, on the North River, discovered near his house a large black snake; he seized a billet of wood and pursued him some 20 yards, to near a small tree, when the serpent turned, raised himself in an upright position, and prepared to act upon the defensive. He threw the billet of wood and missed him, whereupon his snakeship came at him full tilt, his mouth thrown open, and with his fiery eyes and forked tongue, exhibiting all the venom of his species. Mr. F. seized a small stick, and as he came up made a pass at him, but he doged it and gave back. This repeated several times, the snake all the time with his eyes steadily and piercingly fixed upon that of Mr. F. After some two minutes spent in this way the snake suddenly vanished, "and," says Mr. F. "as quick as thought itself I beheld him upon the limb of a tree, about ten feet above my head, and in the very act of springing upon me." The distance from the ground to the extremity of the limb where the serpant prepared for a leap, could not have been less than 25 to 30 feet, and yet Mr. E. had only time to change the direction of his own eyes ere they met the keen gaze of the serpant in his new position. He then called to his brother to bring him a loaded gun, keeping eye upon the snake until he was shot dead from the tree. Before they left the spot still a larger one appeared, much more venomous than the first, being determined to revenge the death of its mate. This one they also killed; she measured 5 feet 7 inches in length and 3½ inches in diameter. The mate was 5 feet 2 inches long, and three inches in diameter. —*North River Times.*

COMMUNICATIONS.

Bartram Botanic Garden.

Mr. Tucker—In conformity with my promise to you when at Rochester in the month of May, I purpose occasionally sending for your pages such matter as I may deem worthy of notice. I flatter myself the following observations respecting the first botanical establishment ever attempted in America, its founder and his successors, with its present state in the scale of Botany and Horticulture, will be acceptable to many, particularly the gardening portion of your readers.

Bartram Botanic Garden is situated on the west banks of the river Schuylkill, about three miles from Philadelphia. It was established by that venerable and enthusiastic naturalist, John Bartram the elder, in the year 1720. The worthy founder of these gardens discovered in his early youth a love for philosophy and natural history in general. He was however particularly drawn to the study of botany from considering the importance of vegetables in the practice of medicine, and their indispensable use in various departments of human economy. But at that time botany was but little attended to in America, and in the old world the works of the great Linnæus had not appeared; he had therefore no other aid in studying the great book of nature than his own persevering genius. His view in the establishment of the garden was to make it a deposit of the vegetables of the United States, (then British Colonies,) as well as those of Europe and other parts of the word, that they might be the more convenient for investigation. He soon furnished his grounds with the curious and beautiful vegetables in the environs, and by degrees with those more distant, which were arranged according to their natural soil and situation, either in the garden or on his plantation, which consisted of between 200 and 300 acres of land, the whole of which he termed his garden. The novelty of this horticultural scene attracted the notice of the ingenious and curious, and coming to the knowledge of Europeans, several scientific men in England, particularly of the Royal Society, united to encourage the founder to undertake journies towards the western frontiers, in order to discover and collect various non-descript productions in nature, particularly vegetables, that they might be sent to Europe.

From the American edition of Ree's Cyclopædia, I learn Mr. Bartram corresponded with *Linnæus, Lord Petre, Sir Hans Sloane, Dr. Fothergill*, and many other eminent men. The former said in one of his letters, that he (Mr. Bartram) was the greatest natural botanist in the world. He employed much of his time in excursions through the provinces, from the shores of Lake Ontario to the source of the river St. Juan in East Florida. He was appointed American Botanist to his Britanic Majesty George the Third, in which appointment he continued till his death in Sept. 1777, in the 76th year of his age. Mr. B. was a native of Delaware county, Penn. John, the youngest son, succeeded his father as proprietor of the Kingsess Botanic Gardens, but they were chiefly under the superintendence of his brother, Mr. Wm. Bartram, well known in the literary world by his travels in East and West Florida, the Cherokee country, &c. &c., who accompanied his father on many of his extensive botanical tours, and who seems to have inherited his unwearied zeal and vigorous capacity for that sublime science. The fame of this gentleman extended to both continents; in his sphere he was one of the most useful men in America; his knowledge was acquired by incessant bodily labor; the fields of natural science in his days were unexplored, and he resorted to the study of nature where she unfolded her works to the senses as the only true source of knowledge. To this gentleman we are indebted for the discovery of many new and rare plants, and among others the *Franklinia Altamaha*, (Gordonia pubescens,) a beautiful tree so called in honor of Dr. Franklin. At the solicitation and expense of the celebrated Dr. Fothergill of London, he made excursions to the Floridas and to the western parts of Carolina and Georgia, in search of rare and useful productions of nature, but chiefly of the vegetable kingdom, to which gentleman he sent his collection of plants, dried specimens and drawings. The work already alluded to was the result of these travels. This work was published almost simultaneously in Germany, in Dublin, (Ireland,) and the United States.

A few minutes before the death of this enthusiastic admirer of nature, he wrote an article on the natural history of a plant, and in rising from his desk to take a morning view of the botanic grounds, he had only proceeded a few steps from the door, when he burst a blood vessel, which suddenly closed his useful life, July 22, 1823, in the 85th year of his age.

The gardens are now in the possession of Col. Carr, to whose indefatigable exertions, aided by that of Mrs. Carr, the gardens owe their present celebrity, for they are the admiration of every visiter, whether native or foreigner. Mrs. Carr is the daughter of John Bartram the younger, but to speak in just terms respecting her enthusiam for plants, (which is only equaled by her success in their cultivation,) is a task I am incompetent to perform, for I am not possessed of words which could convey in the most remote degree the passionate fondness with which she toils among the plants, in every department, from the earliest dawn until darkness renders her operations impracticable. Mrs. Carr's botanical acquirements place her in the very first rank among American botanists. Her knowledge of American plants is most extensive, not surpassed, if equaled, by any one in the United States. But, to this lady and her uncle, Mr. Wm. Bartram, the world is under another deep debt of gratitude, for it was to the friendly conversations and instructive communications of the latter that Alexander Wilson, my countryman, first imbibed, or at all events carried his passion to such an extent for the native birds of America. To the former (Mrs. Carr) he was principally indebted for his knowledge of and his proficiency in drawing. To their combined efforts we are indebted for his American Ornithology.

In examining Bartram Botanic Garden, one characteristic feature will be obvious to the most inattentive observer, viz: the large specimens of various trees planted by John Bartram the elder, and his son Wm. Bartram. While on a visit to the garden in the month of November, 1831, I was forcibly struck with their magnitude, (see Loudon's London Gardener's Magazine, vol. 8th, page 284,) but then, and on several succeeding visits, I could not dedicate time to ascertain their exact dimensions; however, with the assistance of Mr. Carr, Jr., I have recently been enabled to gratify myself on this point, having accurately measured thirty distinct species, the dimensions of which were as follows:

No.		Circumference. feet.	inches	Height. feet.
1.	Æsculus flava,	6	4	90
2.	Ailantus glandulosa, (25 years old,)	4	2	55
3.	Andromeda arborea,	3	10	60
4.	Bignonia radicans,		3	
5.	Buxus sempervirens-*vel.variegata*,	2	6	25
6	Castanea pumila,	2	9	
7.	Cercis canadensis,	3		35
8.	Chionanthus virginicus, (one limb of,)	2	6	20
9.	Cornus florida,	2	9	30
10.	Cupressus disticha,	23	9	123
11.	Cyrilla caroliniana,	2	1	
12.	Diospyros virginica,	5	7	70
13.	Gordonia pubescens,(Franklinia)	3	8	52
14.	Gymnocladus canadensis,	5	2	80
*15.	Dirca palustris,	25	6	6
16.	Halesia tetraptera,	4	0	45
17.	Juglans divæformis	4	6	70
18.	Magnolia accuminata,	6	3	80
19.	—— auriculata,	4	1	50
20	—— tripetela,	3	0	35
21.	Morus rubra,	4	1	40
22.	Pinus microcarpa,	4	4	
23.	—— picea,	5	5	85
24.	—— resinosa *vel. rubra*,	4	9	75
25.	Porcelia glabra,	1	10	30
26.	Quercus alba,	12	0	80
27.	—— heterophylla,	3	9	50
*28.	Rhododendron maximum,	45	0	15
*29.	Stuartia virginica,	60	0	20
30.	Thuya occidentalis,	3	5	40

☞ Those marked with an asterisk were measured round the branches, and the whole for the circumference were measured about 6 feet from the ground.

As before mentioned, the gardens are situated on the west banks of the Schuylkill river, about 3 miles from Philadelphia, and contain about eight acres of ground, compactly filled with the choicest ornamental trees, shrubs and herbaceous plants, properly located in their natural soils and altitudes as far as practicable. The mansion and green houses stand on an eminence, from which the garden descends by gentle slopes to the river. From the mansion are distinctly seen the winding courses of the Schuylkill and Delaware, with the broad spread meadows and cultivated farms up and down those streams. Beyond this there is an uninterrupted view of the Jersey shore, from the eastern to the southern horizon. The whole comprehends an extensive prospect, rich in the beauties of its scenery and endless in diversity.

The exotic department in the garden is very extensive, and comprises the following houses:

	Length. feet.	in	Width. feet.	in
1. Green house,	50	0	30	0
2. Orange house, &c	30	0	15	0
3. Geranium house,	65	0	11	6
4. Propagating house,	21	6	11	10
5. Rose house,	49	0	13	6
6. New Holland and Stove,	68	0	14	0
7. Geraniums, roses, &c.	26	6	10	6
8 & 9. Rose Pitts,	63	0	7	0
10. Cactus house,	20	0	8	0

No expense is spared in procuring every desirable novelty for the exotic department, and in the Geraniaceæ, Camellicæ, and Cacteæ, this garden is particularly rich. Independent of the Botanic Garden, there is a very extensive Nursery connected with this establishment, occupying upwards of 12 acres, compactly filled with choice fruit trees, ornamental trees, shrubs, &c. Col. Carr has, by the most indefatigable exertions, imported the choicest varieties of fruit trees from the different horticultural establishments in England, France, Germany, &c. Col. C. not only imports scions of all that is rare and valuable, but also trees for immediate sale, the demand for fruit trees in the western country being much greater than the existing establishments can supply. The unwearied zeal of the proprietor renders his nursery inferior to none in the United States, as respects the variety of fruits, ornamental trees, shrubs, &c. The whole establishment does great credit to the owner, who is universally respected, but not more esteemed for his laudable exertions and correctness in the various departments of his establishment, than for his amenity as a gentleman.

Immense quantities of seeds collected in this garden from the old specimens are annually exported to Europe. The garden is the resort of the Philadelphians, the casual visiter, and in fact of the tourist in general—they command universal admiration. In fact, the great variety they contain of the choicest American shrubs—the enormous magnitude of many, and the extensive collection of exotics, must prove a source of attraction to the amateur, and an interesting field for the scientific. But to convey an idea of the estimation in which these gardens are held, I may here mention that the Philadelphia and Baltimore rail-road, now constructing, as originally planned, would have gone through the very center of the gardens, and sacrificed the most splendid of the specimens, but the rail-road company, with a desire to preserve them entire, altered the route at an additional expense to themselves of 10,000 dollars. Such a magnanimous act was highly meritorious, and deserves the gratitude of an American public.

Col. Carr corresponds with many scientific gentlemen in Europe, and in North and South America, consequently the garden is a depot for all that is rare and valuable.*

I am, dear sir, yours very truly,

ALEXANDER GORDON.

Philadelphia, July 3, 1837.

* It is I understand the intention of Col. Carr to dispose of the gardens, green houses, &c. Should he meet with any gentleman who would preserve them entire, or if the Philadelphia Hor. Soc. would purchase them, he would make a considerable sacrifice. To any gentleman devoted to Botany what an opportunity here presents itself, and it is sincerely to be hoped that either the Society will purchase them, or that some amateur will step forward and possess himself of this rich and charming establishment. A. G.

Cure for the Fistula.

As your useful paper is made much more so by publishing any useful discovery, or valuable information, without pretence to either, I send you the following result of my experience, which you are at liberty to publish if you think it worth an insertion.

A few years since I had a fine horse about six years old, that I had purchased in the south part of Ohio shortly before. From an injury from his collar or some other cause, a large tumor arose on his withers, that shortly after proved to be a fistula. I tried varions remedies said to be specifics, all to no good purpose. Having had no little experience of the action of arsenic upon the human body in similar cases, I was thereby induced to try it upon my horse. Accordingly I took a small piece of cloth, wet it and rolled it over and over in dry arsenic, and in the shape of a small roll, thrust it to the bottom of the tube and secured it there about ten hours. At the end of the time, finding the tube detached from the animal except a little at the bottom, I then separated it from the horse with a sharp knife. It healed readily and has showed no disposition to return since.

I have much faith in the use of arsenic for one or more applications in similar diseases. Let those who wish try it, then say what they think of it.

The arsenic acting as a caustic, destroys the vitality of the parts in contact with it.

Yours Respectfully, SPECTATOR.

Brighton, N. Y., July 3, 1837.

From the Complete Practical Farmer.

Ploughing.

Ploughing is justly considered the most important of agricultural operations, as on the manner in which this is performed, depends the facility of executing all succeeding operations on the same piece of land. The manual operation of holding the plough in a proper position, and directing the horses or cattle which draw it at the same time, is only to be acquired by experience; when once attained it is perhaps one of the most agreeable and healthy of agricultural exercises, the body being kept ûpright, the arms and legs being brought into action, and also the eye and the mind, to keep the furrow straight, and of regular width and depth, and the voice to speak to the horses.

Three different points require particulur attention in ploughing; 1st, The breadth of the slice to be cut; 2d, its depth; and 3d, the degree in which it is to be turned over; which last circumstance depends both upon the construction of the plough, particularly the mould-board, and the care of the ploughman.

The breadth and depth of the furrow slice are regulated by judiciously placing the draughts on the nozzle or bridle of the plough; setting it so as to go more or less deep, and to take more or less land or breadth of slice, according as may be desired.—In general, the plough is so regulated that, if left to itself and merely kept from falling over it would cut a little broader and a little deeper than is required. The coulter is also placed with some inclination towards the left or land side, and the point of the soc or share has a slight tendency downwards.

The degree to which the furrow slice turns over is in a great measure determined by the proportion between its breadth and depth, which for general purposes, is usually as three is to two, or when the furrow is nine inches broad it ought tobe six inches in depth. When the slice is cut in this proportion it will benearly half turned over or recline at an angle of forty or forty-five degrees; and a field so ploughed will have its ridges longitudinally ribbed into angular drills or ridgelets. But if the slice is much broader in proportion to its depth, it will be almost completely overturned, or left nearly flat, with its original surface downwards; and each successive slice will be somewhat overlapped by that which was turned over immediately before it. And finally, when the depth materially exceeds the width, each furrow-slice will fall over on its side, leaving all the original surface bare, and only laid somewhat obliquely to the horizon.

Ploughing with the breadth and depth nearly in the proportion of three to two, is best adapted for laying up stubble land after harvest, when it is to remain during winter exposed to the mellowing influence of frost, preparatory to fallow or turnips.

The shallow furrow of considerable width, as five inches in depth by eight or nine wide, is understood to answer best for breaking up old leys, because it covers up the grass turf, and does not bury the manured soil.

Ploughing with the depth of the furrow considerably exceeding the width, is a most unprofitable and uselessly slow operation, which ought seldom or never to be adopted.

The most generally useful breadth of a furrow-slice is from eight to ten inches, and the depth ought to be seldom less than four inches, except in soils uncommonly thick and fertile. When it is necessary to go deeper, as for carrots and some other deep rooted plants, a trench ploughing may be given by means of a second plough following in the same furrow.

Shallow ploughing ought always to be adopted after turnips are eaten on the ground, that the manure may not be buried too deep; and also in covering lime,—especially if the ground be pulverised by fallowing, because it naturally tends to sink in the soil. In ploughing down farm-yard dung, it is commonly necessary to go rather deep, that no part of the manure may be left exposed to the atmosphere. In the first ploughing for fallow or green crops, it is advisable to work as deep as possible, and no great danger is to be apprehended, though a small portion of the subsoil be at that time brought to the surface.

The furrow-slices are generally distributed into beds varying in breadth according to circumstances; these are called *ridges* or *lands*, and are divided from one another by gutters or open furrows.—These last serve as guides to the hand and eye of the sower, to the reapers, and also for the application of manures in a regular manner. In soils of a strong or retentive nature or which have wet close sub-soils, these furrows serve likewise as drains for carrying off the surface water, and being cleared out, after the land is sowed and harrowed, have the name of *water-furrows.*

Ridges are not only different in breadth, but are raised more or less in the middle, on different soils. On clayey retentive soils, the great point to be attended to is the discharge of superflu us water.—But narrow ridges or *stitches* of from three to five feet, are not approved of in some of the best cultivated counties. In these a breadth of fifteen or eighteen feet, the land raised by two gatherings of the plough, is most commonly adopted for such soils; such ridges being thought more convenient for manuring, sowing, harrowing, and reaping, than narrower ones; and the water is drained off quite as effectually.

Ridges on dry porous turnip soils, may be formed much broader; and were it not for their use in directing the laborers, may be, and sometimes are, dispensed with altogether. They are often thirty or thirty-six feet broad, which in Scotland are called *ban win* ridges, because reaped by a band of shearers, commonly six, served by one binder. If it be wished to obliterate the intermediate furrows, this may be done by casting up a narrow ridgelet, or single bout ridge, between the two broad ridges, which is afterwards levelled by the harrows.

The mode of forming ridges straight, and of uniform breadth, is as follows: let us suppose a field perfectly level, that is to be laid off into ridges of any determinable breadth. The best ploughman belonging to the farm conducts the operation, with the aid of three or more poles shod with iron, in the following manner: the first thing is to mark off the head ridges,on which the horses turn in ploughing, which should in general be of an equal breadth from the bounding lines of the field, if these lines are not very crooked or irregular. The next operation, assuming one straight side of the field, or a line that has been made straight, as the proper direction of the ridges, is to measure off from it with one of the poles, half the intended breadth of the ridge, if it is to be gathered, or one breadth and a half if to be ploughed flat: and then the ploughman sets up a pole as a direction for the plough to enter. On a line with this, and at some distance, he plants a second pole, and then in the same manner a third, fourth, &c. as the irregularity of the surface may render necessary, though three must always be employed,—the last of them at the end of the intended ridge, and the whole in one straigh line. He then enters the plough at the first pole, keeping the line of poles exactly between the horses, and ploughs down all the poles successively; halting his horses at each, and replacing it at so many feet distant as the ridges are to be broad; so that when he reaches the end of the ridge, all his poles are again set up in a new line parallel to the first. He returns however, along his former track, correcting any deviations, and throwing a shallow furrow on the opposite side of his former one. This mode has a decided preference over the common practice, of laying the two furrows first towards each other. By first throwing them from each other, and then reserving them, the whole ground is ploughed; and,if the first furrows are shallow,the ridge has but a slight elevation in the centre. These furrows, when reversed, form the crown of the ridge, and direct the ploughmen who are to follow. The same operations are carried on until the whole field is marked out.

Direction and length of ridges are points which must evidently be regulated by the nature of the surface, and the size of the field. Short angular ridges called *butts*, which are often necessary in a field of irregular boundaries, are always attended with a considerable loss of time, and ought to be avoided as much as possible.

In ploughing steep land, it is advisable to give the ridges an inclination towards the right hand at the top, by which in going up to the acclivity, the furrow falls more readily from the plough, and with less fatigue to the horses. Another advantage in forming ridges in a slanting direction on such land is, that the soil is not so likely to be washed down from the higher ground, as if the ridges were laid at right angles. Wherever circumstances will permit, however, the best direction is due north and south, by which the grain on both sides of the ridge enjoys nearly equal advantages from the influence of the sun.

In ploughing relatively to season it is well known that clayey or tenacious soils should never be ploughed when wet; and that it is almost equally improper to let them become too dry; especially if a crop is to be sown without a second ploughing. The state in which such lands should be ploughed is what is commonly indicated by the phrase, "between the wet and the dry"—while the ground is slightly moist, mellow, and the least cohesive.

One Bud.

In propagating the Morus multicaulis from cuttings, most cultivators have hitherto considered two buds to each cutting indispensable to the production of a tree, on the supposition that one bud threw out the root, and another the shoot; but the prevalent opinion now is, that one bud is as good as two, and some think better. The notion that the root proceeds from a bud is now generally exploded, and most propagators use cuttings with one bud only, that being sufficient to send out a shoot, which is all that is necessary to the formation of a perfect tree. Our confidence in this theory is so strong that we have adopted it in our own practice, having put out most of our cuttings with a single bud. Other nurserymen in this region, so far as we are informed, are following the same course, and the question will be finally settled the coming autumn by the results of numerous experiments.

But we are not without some experience on the subject. The trial has been made, and complete success has attended it. The following extract from a letter from a scientific and practical cultivator in Virginia, to his correspondent in this State is, to our mind, conclusive evidence, not only that two buds are not necessary, but that one is better than two in most cases. He says:—"I put about 400 cuttings in a hot bed, on the 15th of February, [1837.] They varied in size from a half an inch to three inches in length, and from one and a half inches to less than an eighth of an inch in diameter, and I believe every one is growing—*more than a dozen of them are already bearing fruit.* There are some with shoots not more than three inches high, with three mulberries to each, the size of our common White mulberry. Some of the cuttings, one and a half inches in diameter and two inches long, are sending up two shoots. I was looking at others today not half an inch long and one eighth of an inch in diameter, with five vigorous shoots to each.

It is often asserted in books, and in the periodicals that two buds are necessary to a cutting. My own experience drawn from a close watching of these cuttings, in my hot bed, is that one bud is not only all that is necessary, but that one is better than two, and I have accordingly put out all my cuttings with one bud on each. They say that the lower bud is necessary for roots, and that it turns into roots.—This is not so. I have taken up my cuttings in the hot bed repeatedly, and though I planted in the first instance with two buds, and have found that the lower bud, instead of turning into roots was trying to turn into a stalk, while the roots were coming out just below the bud. So I cut them all into two, and they are now all doing well with a single bud. The roots come out just below the bud, and are sufficient to the support of the one shoot. If you have two buds and but one in the ground the upper cannot put out roots, and the roots of the lower being insufficient for it and also for the shoot that is trying to form below, the plant withers and droops under the hot sun, and accordingly many persons shade their young trees from 10 o'clock A. M. to 2 o'clock P. M. Give each bud its roots, and this will not be necessary. Thus I have reasoned, and have put my cuttings at once into their place in the field, instead of a nursery with conveniences for shading as is usually recommended. I have thus doubled my number of cuttings, and shall save the immense labor of transplanting in the hot season. The roots spring also, by and by, from the end of the cuttings; but in the first instance only from the little whitish knobs, which you may see, just below the bud. Put the bud about half an inch beneath the surface of the ground.

I have put out 35,000 cuttings of the multicaulis, and as I hope to get an abundance of leaves this summer, have also procured 23,000 eggs from Hartford, and as soon as we get through the corn-planting, shall put up a cocoonery. The business is making a good deal of noise here, and if I succeed there are dozens will immediately follow suit."—*Silk Culturist.*

From the British Farmers' Magazine.

Manufacture of Beet-root Sugar.

(*Continued.*)

Second Method—French Process—

So called, because it was first adopted in France, and consists, in the first instance, of the use of lime to excess, and then neutralizing, in part, the alkalization of the juice, by sulphuric acid. M. Dubrunfaut has detailed the particulars of the following experiments made by M. Cafler and himself at the manufactory of the former.

Experiment 1.

At the time the narrator arrived, only two charges had been worked off, the third was then in progress, and great difficulties were encountered in the course of the work. The filtration was then impossible or very bad. The syrup in the moulds, the produce of the two former defecations, furnished only a blackish sugar. On trying the sugar in the third boiler, it was found highly alkaline, and contained not only a little lime, but ammonia, and a good deal of potash, which entered into combination with the albumen, and formed with it a soluble compound. The charge under defecation was 2500 litres, (570 gallons): 22 lbs. of quick lime had been put into the boiler. The precipitation had been tolerably good, but the scum when put into the filter was smeary,* and would not run. Sulphuric acid diluted with water was then added in small quantities, until the liquor indicated but a weak proportion of alkali.

From that moment the blood operated, the juice granulated well, and filtered with great ease and clearness. The flavor was sensibly improved; when put to boil it did not altogether present the same facilities as the alkaline syrup, but the proof was obtained without burning. The sugar crystalized well in the mould, was perfectly clear, had no bad taste or smell, and in short, was infinitely superior to that obtained from lime alone. The syrup which flowed from this sugar was also well tasted, free from any unpleasant smell, and it was thought by its strong saccharine flavor, to be capable of crystalization when reboiled, which ultimately proved to be correct, as succeeding experiments will show.

To obtain the above results the enormous quantity of two ordinary bottles of sulphuric acid at 66° was used in the clarification. The following experiment was made on the same quantity of juice.

Experiment 2.

Another boiler was defecated, as in the preceding case, with 22 lbs. of quick lime; then precipitated and evaporated till the clarification was concentrated. The only difference was, that after putting in the lime, the animal charcoal arising from two former charges was added. The juice of this defecation indicated an excess of alkali that was nearly neutralized by the diluted sulphuric acid. This time it was imagined, that half a bottle of the acid (say 24 to 28 oz.) would be sufficient to render the alkali nearly neuter, whereas in the first experiment 106 oz. were required to produce the same effect. This is an enormous difference, and evidently depends on the animal charcoal, which acts on the alkalis as an acid, in the defecating process. This mode of applying animal charcoal is important and curious, as showing, that though it had already acted in a former instance, it still retained its neutralizing quality, and that the use of it in defecation had reduced the proportion of sulphuric acid to a quarter of that required without the carbon. The sugar was equally good with that of the preceding experiment, and the molasses reboiled, capable of an abundant crystallization.

This experiment was repeated several times, and always with the same results.

Experiment 3.

Another boiler was defecated with 22 lbs. of quick lime, as in the preceding cases, with the addition of the acid only that the quantity this time was not confined to just enough to produce neutralization, but to a small portion beyond this. The clarification, notwithstanding, proceeded well. The blood produced its proper effect, and the juice filtered with ease; but in boiling, there was a great head of froth on the syrup, which it seemed impossible to keep down. In spite of every precaution to the contrary, the contents of the copper were much burnt. The syrup was drawn from the boiler, and then put into the moulds. These, instead of showing, after cooling, a smooth, solid surface, exhibited only a froth, which did not dry, though the grain formed well enough; and when the moulds were opened some days after, a pasty, but very fine sugar was discovered, and so smeary, as very imperfectly to purge itself of the molasses. These, mixed with the molasses of the preceding experiments, did not alter their agreeable flavor, but deprived them of their property of reboiling.

Observe, that in this experiment the excess of acid was very small, and hence may be shown the injury which this agent is capable of producing, when not used in proper quantities. The sugar is most affected by it when at a high temperature; for when cold, it has little or no effect. Much of the loss and disappointment occuring in certain sugar making establishments have arisen from this source, the not knowing the proper proportions of sulphuric acid.

Experiment 4.

22 lbs. of lime were applied to 750 gallons of juice, the boiler being at the time at 65° of Reaumur, (178° of Fahrenheit); at 70° (189° F.) the scum had coagulated well and the juice showed by its clearness and easy precipitation, that the proportion of lime was sufficient. Sulphuric acid diluted was then added, to neutralize, as much as possible, the excess of the lime; and to effect this completely, the enormous quantity of 4½ kilogrammes (159 ounces) was found necessary. The addition of the sulphuric acid increased the precipitation, and when boiled, the liquor was nearly without scum, and altogether, the defecation was good. Two boilers were thus treated, and their united contents boiled together; the result was perfectly satisfactory. The molasses had no bad smell or taste; on the contrary, they afforded every hope of succeeding, if reboiled, and this was confirmed by after experience.

The results of this experiment being so advantageous, it is hardly to be expected they will be materially improved upon; and, accordingly, we are told it is the method in common use in most of the principal establishments in France. M. Dubrunfaut has described the various plans pursued by M. M. Chaptal, Dombasle, the Duke of Ragusa, and M. Bernard, concluding with his own: the clarification, in this last case, taking place in boilers of 114 gallons, (500 litres,) which is considered by the author as the most convenient size. The boiler being charged, it is heated, and then clarified with lime; when enough of this has been used to make the juice perfectly clear, the temperature may be 190° to 201° (Fahrenheit,) the lime being applied as recommended, at 178°. The sulphuric acid is then added, having been diluted with six times its bulk of water. It is applied in small quantities, stirring briskly each time. Every time that the acid is applied, it will be necessary to examine the juice, which is done in the following manner. The operator should be provided with a spoon and a very white porcelain saucer. On the surface of this saucer, a few drops of syrup of violets should be placed, by means of a small skewer, dipped into a bottle of the syrup. It will be as well, also, to have on this saucer a small quantity of well prepared blue turnsol. This done, he then may proceed to examine the juice.

The thick scum is first removed, which has been produced by the lime and sulphuric acid, a quantity of the purified juice is then taken in the spoon, to see if the clearness and precipitation go on well, proving, in that case, that the sulphuric acid has not been over-applied. The better to assure one's self of this, let a wooden peg be dipped in the juice contained in the spoon, which mix with one of the drops of syrup of violet in the saucer. If the alkali is predominant in the juice, the syrup of violets will change to a fine deep green color. In proportion as the alkali becomes weaker, the green will take the more time to develop itself, and will lose its deep hue. The addition of the acid must cease when the syrup, touched by the juice, turns but slowly to green. A certain number of drops of syrup have been recommended to be placed in the saucer, for the convenience of making several different experiments. It will not be amiss, after ascertaining by the syrup of violets that the proportion of acid is sufficient, to touch the spots of turnsol with the juice, in order to be satisfied that it will *not turn* them red; for it is the property of acids to change the blue color of the turnsol to red. This latter experiment is of no other use than to prove to an inexperienced practitioner that his eye has not deceived him in the former experiment. If too much acid, it must not only be neutralized by the lime, but there must be also a slight excess of this alkali. Care should be taken in the above trials, that the quantities of juice and syrup should be equal, or nearly so, for if either predominate, the results will neither be satisfactory nor correct.

When it is ascertained that the boiler contains but a slight excess of alkali, and after the contents have been well stirred, the fire is withdrawn, and they are left to settle.

In about half an hour the liquor will be clear enough to draw off. One may reckon that 114 gallons of juice, requiring 6 or 7 lbs. of lime, will take nearly a kilogramme (35 oz. av.) of acid to neutralize them sufficiently. Admitting that it requires the amount of two charges of the press to fill one boiler, from a quarter to a third of the weight of lime required for a defecation may be added to the juice, in the vessel in which it comes from the first press. This measure will be particularly advisable when the temperature of the place be at from 61° to 73° of Fahrenheit.

Third Method—M. Achard's Plan.

Achard, when he established his manufactory, was indebted to no one, either for plans or machinery, but struck out a path for himself, in which he has, to a certain extent, been eminently successful. His method of defecation differs from those we have been describing, inasmuch as, instead of using the lime first, and then the sulphuric acid, he begins with the latter, and neutralizes with the former. It differs also in other respects, which will be hereafter alluded to.

The juice, on first issuing from the press, was depsoited in large earthen vessels, where it was acidulated. This acidulation was obtained by 1½ drachms (avoird.), 2½ grammes of sulphuric acid for every litre (61 English cubic inches, nearly two

* *Smeary*—a technical term, equivalent to *gras, fatty.*

pints) of juice, not more than six or seven hours elapsing between the extraction of the juice and its acidulation.

The following is M. Achard's own account of the process adopted by him. "The boiler having been well cleaned, the bottom is uniformly covered with chalk, finely powdered, in the proportion of about three drachms for every litre (61 cubic inches) of juice, acidified the day before.* It is then about two-thirds filled, that there may be room for the scum to form on its surface. The contents of the several earthen vessels are then got together, and poured into the boiler. The upper part of the acidified sugar is clear, but the bottom is thick, of a greyish color, from the flakes of albumen and other impurities precipitated by the acid. The sugar is well mixed with the chalk, in order that the combination may be complete; for the object of this operation is to saturate the sulphuric acid which has been added to the sugar. It thus forms a sulphate of lime which is deposited at the bottom of the boiler. This precipitation is attributable to the insolubility of the lime, which requires 250 or 300† times its weight of water to hold it in solution. Such of it as remains in the sugar is separated by an after process.

"It would at first appear, that any sort of calcareous earth may be employed for this purpose; but experience proves the contrary. The true reason of this is, perhaps, that these calcareous stones are always mixed wtih extraneous substances, insomuch that their weight does not exactly indicate that of the calcareous carbonet; to say nothing of the obstacles which these substances interpose in the way of the clarification. By the combination of the sulphuric acid with the lime, the carbonic acid with which is is saturated is set at liberty and remains in the juice, sometimes showing itself in little bubbles. Experience has proved the necessity of disengaging this acid before refining, because the extraction of the sugar is thereby facilitated. The best means of effecting this, is by adding chalk converted into into quicklime by the action of fire. If burnt beforehand, it should be carefully preserved from the effect of the atmosphere. The calcined chalk may be added to the juice in the boiler about a quarter of of an hour after the unburnt chalk, at the rate of two drachms avoirdupois for every gallon of Juice; the boiler is then covered, and the thermometer placed in it. When at 100° the cover is half taken off, and skimmed milk is added at the rate of 10 or 14 litres (2 to 3 gallons) per 1000 litres (227 gallons) of juice. The whole is well stirred, and then covered down. When the thermometer is at 79° (210°) the fire is extinguished, and when the temperature drops to 145° or 165°, the boiler is uncovered. Before the clarification, the albumen separated from the juice by the sulphuric acid, appeared in flakes too light to be divided from the mass, but, in consequence of the heat, this matter became consistent, an object to which the milk contributed not a little.

"All the particles separated from the juice floated on the surface, forming a dark crust, in one piece, easily removed with a copper skimmer. Underneath, the juice is found perfectly clear."

(*To be Continued.*)

Topless Potatoes.

We were, the other day, shown a curious specimen of new potatoes, that were grown without any top, or leaves. About five weeks ago, Mr. J. H. Hill, of Waterville, planted some potatoes of the common kind in the usual way. One or two hills did not come up, and he last week dug down to them and found that the potato which he had planted, and which was a whole one, had put out several tubers.

Two of them were as large as a pigeon's egg, each; and there were several smaller ones beginning to show themselves. There was not a sign of any top or leaves to be seen. He found another hill in which the same process was going on.

We do not recollect having seen an instance of the kind. The growth of the new tubers must have been quite rapid, having grown out and formed to the size above mentioned in five weeks, of not very warm weather. The question suggests itself—how long and how large will they grow without any stalk or leaf to prepare sap for their nourishment? And also, will they continue to grow after the parent potato becomes decayed? and if so, from whence comes the nutriment that gives their increase?

The potato that was planted is sound and hard yet. —*Me. Farmer.*

* Observe, the juice is never put into the boiler till it has been in contact with the sulphuric acid about twenty-four hours.

† M. Achard states 470 times its weight of water; but we are assured by M. Dubrunfaut, that in beet-root juice it is much more soluble than in water, and that even in this latter it only requires 250 or 300 times its own weight to dissolve it.

Importations of Bread.

Few men in the community, and especially practical farmers, are aware of the effect which the late importation of bread stuffs has had upon our national character and credit. The farmer who is dependent upon his neighbor for the ordinary agricultural products of the climate in which he lives, is not considered entitled to very large or long credit;—and it is precisely so with a country who are dependent on other nations for the staff of life. Not long since the Rothschilds were invited to make sundry investments in the United States, but declined, offering as a reason that they did not think much of a country that imports its bread.—*Silk Cult.*

Dr. Franklin, in a sketch of his life and habits, relates the following anecdote of his frugal and affectionate wife. A wife could scarcely make a prettier apology for purchasing her first piece of luxury.

We have an English proverb that says,

"He that would thrive,
Must ask his wife;"

it was lucky for me that I had one as much disposed to industry and frugality as myself. She assisted me cheerfully in my business, folding and stiching pamphlets, tending shop, purchasing old linen rags for the paper makers, &c. We kept no idle servant, our table was plain and simple; our furniture was the cheapest. For instance, my breakfast was for a long time bread and milk, (no tea,) and I eat out of a twopenny porringer, with a pewter spoon; but mark how luxury will enter families, and make a progress in spite of principle; being called one morning to breakfast, I found it in a China bowl, with a spoon of silver. They had been bought for me without my knowledge, by my wife, and cost her the enormous sum of three hundred and twenty shillings; for which she had no other excuse or apology to make, but she thought *her* husband *deserved* a silver spoon and China bowl, as well as any of her neighbors. This was the first appearance of plate or China in our house, which afterwards, in the course of years, as our wealth increased augmented gradually to several hundred pounds in value.

Valuable Publications.

THE following valuable works are published by *D. K. Minor* and *G. C. Schaeffer*, 30 Wall-street, New-York, to whom all orders should be addressed:

New York Farmer, and American Gardeners' Magazine,—published in semi-monthly parts of 16 pages, at Three Dollars per annum, in advance.

Rail Road Journal, and Advocate of Internal Improvements—published once a week, in a large octavo form of 16 pages at five dollars per annum, in advance.

Mechanics' Magazine, and Journal of the Mechanics' Institute—published and forwarded, in weekly sheets of 16 pages, or monthly parts of 64 pages, if desired, at three dollars per annum, in advance.

Transactions of the Institution of Civil Engineers of Great Britain—Republication, in six parts. This work is from the pens of the most eminent Engineers in Great Britain. Price three dollars per copy, or five dollars for two copies; it can be sent by mail to any part of the country. The English copy, from which this is printed, cost ten dollars, and others were sold for the same by the importers. There will be about forty pages of Engravings, neatly done on wood.

Also, Pambour on Locomotion; Van de Graaff on Rail Road Curves; Nicholson's Abridged Treatise on Architecture, with over 40 pages of Engravings; and Views of the Thames Tunnell.

Valuable Works on Gardening.

The Young Gardener's Assistant—containing practical directions for the cultivation of Vegetables, Fruits and Flowers. By T. Bridgeman, seedman and florist, New York—seventh edition, improved. Price $1.

The Florist's Guide—containing practical instructions for the cultivation of Flowers. By the same author. Price 37 1-2 cents.

The Kitchen Gardener's Instructer—containing ample directions for the cultivation of culinary vegetables, herbs, &c. By the same author. Price 37 1-2 cents.

For sale by REYNOLDS & BATEHAM,
May 20. Rochester Seed Store.

Improved Cultivators.

JUST received from Albany, a few of Bement's Expanding Horse Hoes or Cultivator, with extra mouldboards, &c. complete. These are the most approved and perfect implements of the kind now in use, and deserve the particular attention of Genesee Agriculturists.

REYNOLDS & BATEHAM.
Rochester Seed Store, June 29, 1337.

Berkshire and China Pigs for sale.

THE subscriber has a considerable number of the pure Berkshire and China Pigs on sale at his residence on the Niagara river, 2 miles below the *B*lack Rock mills. *He* has also crosses of the *B*erkshire and China, and the China with the long English breed which are equally quiet in their habits, and possess the same tendency to fattening as the former, and have much the advantage in size. The character of these breeds are so well known throughout the state that any description would be superfluous; they are the choicests breeds in England, and the only kind used by their best farmers, and it is believed the same quantity of food will make from 25 to 75 per cent. more pork in these hogs than if fed to the ordinary breeds.

PRICES.

Pure China or cross of China with the long English,	per pair at 4 weeks old,		$12 00
do. do. do.	6 weeks old,		15 00
Cross of China & Berkshire,	perpair at 4 weeks old,		14 00
do. do. do.	do	6 do	18 00
Pure Berkshire,	do.	4 do.	15 00
do.	do.	6 do.	20 00

Communications made through the post office, should be directed to Buffalo.

june3ftf A. B. ALLEN.

Greenhouse and Parlor Plants.

THE splendid collection of Ornamental Plants at the Rochester Greenhouse on Sophia street, are now in a fine healthy condition and ready for sale.

The assortment is very large and embraces many of the most rare and beautiful Flowering Plants, all of which are of easy cultivation and will thrive in a common sitting room with ordinary attention.

Depending on extensive sales and desiring that all who are fond of plants, should enjoy that innocent gratification, we have determined to sell at very reduced prices.

Many of the plants are now in bloom, and the public are respectfully invited to call and see them. The House will be open every afternoon. REYNOLDS & BATEHAM.
May 27.

Still More Seeds!!

WE have just received large additional supplies of genuine Orange Carrot, Mangel Wurtzel, Ruta Baga, and English Turuep seeds, of the best quality.

Also, a good supply of Cucumber, Melon, Squash, and Pumpkin seeds.

The unprecodented demand for seeds this season, had exhausted our stock of some kinds. We can now supply orders at very low prices.

REYNOLDS & BATEAAM,
Rochester Seed Store. Arcade Buildings.
May20.

2.000 LBS. Ruta *B*aga, English Turneps, and Mangel Wurtzel seed, just received from England, and for sale at reduced prices, at the English *S*eed *S*tore, 62 *B*uffalo st. KEDIE & HOUGHTON.
april 29

3.125 L*BS*. Ruta *B*aga, White Flat, Norfolk, Long Tankard, Yellow Bullock, and other Turneps, Mangel Wurtzel, French Sugar Beet, and Orange Carrot, with a great variety of *English Imported Garden Seeds*—"cheap as dirt." at the Rochester Seed Store, *Arcade Buildings*. apr29 REYNOLDS & BATEHAM.

Fruit Trees For Sale.

THE subscriber respectfully informs his friends and the public that he has for sale at his Nursery in Rochester, Monroe county, state of New York, a large quantity of Fruit Trees, grafted and innoculated with the most approved kinds, now fit for transplanting, which he will sell on the most reasonable terms. SAMUEL MOULSON.
apr 15-tf

Monroe Horticultural Garden & Nurseries, Greece, Monroe Co., N. Y.

THIS establishment now comprises over 20 acres, covered compactly with Trees and Plants in the different stages of their growth.

The subscriber offers to the public a choice selection of Fruit Trees, of French, German, English and American varieties, consisting of Apples. Pears, Plums, Peaches, Cherries, Apricots, Nectarines, Quinces, Currants, Gooseberries, Raspberries, Grape Vines, Strawberries, Ornamental Trees, Shrubs, Plants, Hardy Roses, Vines, Creepers, Herbaceous Perennial Plants, Bulbous Roots, splendid Paeonies, Double Dahlias, &c. &c.

Also, a large collection of Green House Plants, of choice and select varieties, in good condition.

Orders respectfully solicited. Trees and Plants, when ordered, are carefully selected and faithfully packed, and if desired delivered on the canal one mile from the Nursery, or at Rochester.

Orders for Mr. Rowe's Nursery received by the publisher of this paper.

Catalogues will be sent to every applicant gratis, or may be had by calling at the office of the Genesee Farmer.

April 1, 1837. ASA ROWE.

What is a Useful Education?

We put the question in reference to the great body of American youth, who are to earn their bread by the sweat of their brows, and, under Providence, to wield the future destinies of our country. Two principles should govern: *Teach them* TO PROVIDE FOR THEMSELVES HONORABLY, under anv ordinary contingency,—*and qualify them to become* USEFUL TO SOCIETY. The times, as well as universal experience, abundant'y admonish us, that however the children of wealth may indulge in indolence and dissipation—while their means last,—the great mass of American youth, must and ought, to depend upon their labor for their fortunes and their usefulness. Fortune is at best precarious; patrimonial dependence is uncertain, and reliance upon the friendship or charity of the world, or upon office, is frail and often debasing. Self-dependance is the only sure stay. *We are ever most willing to help those who help themselves.* Productive labor is the legitimate source of all our wealth, individual and national; and this labor is profitable to the individual and to the nation, *in proportion to the measure of intelligence and scientific knowledge which guide and direct its operations.* Hence it is of primary importance, that our youth should be efficiently taught to labor, and that their minds should be early imbued with that kind of knowledge which will instruct then in the principles of their business, render it honorable, and make them independent in conduct and in fortune.

We have, to be sure, colleges and academies in abundance, more than can be well supported, or that can be made economical and useful. But these are in a measure consecrated to the learned professions—to the privileged few—for they are privileged inasmuch as they are the exclusive recipients of public bounty in the higher branches of learning. Productive labor derives little or no advantage from their teachings. Few of the youth who enter their halls ever seek for a livelihood in the laboring arts. They learn to look upon labor as servile and demeaning, and to seek their level in what they consider the *higher classes* of society. They do not go to these schools to *learn to work*, or to *learn to live by work*,—in the common meaning of these terms—but to *learn to live without work—above work.*—They are virtually withdrawn from the producing classes. These young aspirants flock to the learned professions, and the genteel employments, as the avenues to honors and to office; and notwithstanding that labor is taxed heavily, in one way or another, to supply their real or imaginary wants, yet the genteel professions have become so overstocked and the threshold of power so thronged with suppliants, that hundreds and thousands are thrown back, as parasites, upon society, exhibiting the melancholy spectacle of men, born to be useful, but unable, or unwilling. from the bias of a wrong education, to become so. Had these men been taught to look upon labor, as it truly is, a necessary, healthful, independent, and honorable employment, *and been instructed in its principles and its practice*, while young, they would have cherished its interest, respected its virtues, and cheerfully shared in its toils and in its pleasures. We seek not, by these remarks, to pull down that which is, but to build up which is not. It is not that we love a part less, but the whole more. We would raise the standard of labor, without depressing that of literature.

We have common schools too, munificently endowed, where all may acquire the rudiments of knowledge, but the rudiments only. They teach nothing of the sciences which are necessary to the successful prosecution of the arts—and give no instructions in the best models of practice. Tbey neither learn the boy how to provide for himself, nor fit him for extensive usefulness. They lay the foundation, but they do little to build up and beautify the temple.

We find in the London and Westminister Quarterly, in an article on the means of lessening the evils of pauperism, some very apposite remarks upon this subject, which we here transcribe:

"We advocate," says the Review, "both for England and Ireland, the necessity of a national provision for the moral and industrial training of the young. In the old we cannot hope for much improvement. But the new generation springing up might be modelled to our will. Schools are wanted; but not such as are now spreading over the country, to teach a little reading and writing, as if that embraced the whole business of life, and the whole duty of man—schools in which both boys and girls should learn to employ both their heads and their hands—in which they should be taught practically the use of various tools, and in which such general information should be imparted, relating to different branches of industry, [the rights and duties of citizens,] and the resources of other countries and their own, as would enable them to begin to mount the uphill path they would have to climb in after life, with a heart full of hope, and with a spirit of energy and intelligence which no difficulties would overcome."

Who will tell us why it is, that classic schools, available only to those who design to live without labor, are made the special and exclusive objects of legislative bounty, in regard to the higher branches of instruction? Why is it, that six or seven thousand youths, which is about the number in our colleges and academies, should receive gratuities from the public treasury, till the aggregate exceeds three millions of dollars, to enable them to live without work, while half a million of other youth, with like capacities and like claims, destined to labor, and to augment the resources, the wealth and happiness of their country, are denied a miserable pittance, in the higher branches of knowledge, to qualify them for their more important duties in society? Is not knowledge as beneficial to the arts of labor, as it is to the learned professions? Is it not as efficiently and beneficially applied in developing the riches of the earth, in perfecting the mechanic and manufacturing arts, and in augmenting the products and profits of labor generally, as it is in the warfare of party politics, in the chicanery of the law, and in prolonging unprofitable debate in our legislative halls? May not natural science be as profitably studied and applied on the farm, where nature is constantly presenting new subjects of illustration and appliance, as in the town or in the closet? Is not chemistry, which instructs us in the nature and properties of all bodies, as useful to the farmer, in ascertaining the qualities of his soils, and their adaptation to particular crops, and in regulating the multifarious operations of husbandry,—and to the artizan, in managing his various processes,—as it is to the lawyer, the statesman or the divine? There is probably no employment in life that embraces so wide a scope of useful study, as that of cultivating the soil. The great use and end of science is to improve art, to impress us with a sense of our obligations to God, and our duty to man. In truth, science belongs to, and constitutes an integral portion of the arts, and cannot be divorced from them without throwing us back into a state of semi-barbarism, such as now debases a great portion of the population of the old continent. Why then teach science exclusively to the few, who have comparatively so little use for it, and withhold it from the many, to whom it would be a help and a guide?

We look to Europe for precedents, and blindly adopt some that are prejudicial, as well as many that are good. We forget that we are a new people in government, manners and laws, and that there is no country which will serve as our model in all cases. The education bestowed upon the working classes in Europe is designed to qualify them for the subordinate stations in society—for labor and obedience, as *subjects*. There governments recognize a privileged class—who are the owners of the soil, and live upon the labor of the many. The working classes have very little to do with the affairs of government. Here all are professedly upon a footing of equality. All enjoy political rights, and have political duties to perform—and all should be equally favored, so far as the public bounty is dispensed in the means of obtaining useful knowledge, and of acquiring wealth and honors. We should take care to have good farmers and good mechanics, as well as good lawyers and good doctors. We want not only good *subjects*, but intelligent *freemen*—high-minded, independent freemen, "who know their rights, and knowing, dare maintain them."—We wish to keep the fountains pure, that the stream of power may not become defiled. We wish to base our political and social fabric upon a rock, steadfast and sure—upon the intelligence, industry and moral rectitude of the great working community. When this class shall cease to exert a healthful and a controlling influence in political affairs, our boasted freedom will be at an end. A privileged class, whom the bounty of government has assisted to arm with exclusive power, will control and direct the political machine, as may best subserve their aggrandizing views, without regard to the common weal. Ambition is the same in all ages and countries.—Man loves power, and is corrupted by it; and in its prolonged exercise, the servant will ever swell into the master. Our freedom can only be securely guarded by the vigilance of an enlightened, independent, prosperous yeomanry.

Men have tried all sorts of expedients, for thousands of years, to obtain wealth and happiness; and after all, it has become pretty evident, that there is no course that wears so well—that is so self-approving—that is so certain in its success; that gives so much health, contentment and independence—the substantial elements of happiness—as habitual industry, tempered and directed by a cultivated mind,—be it in the learned or laboring professions. The consciousness, that we are not only providing for ourselves, and those naturally dependent upon us, but that we are doing good to society, and thereby fulfilling one of our highest moral obligations, is a rich source of enjoyment, to which the indolent and dissipated must ever remain utter strangers.

We say, therefore, that we want schools of moral, industrial and scientific instruction for the working classes of society—that these classes are entitled to them—and that their establishment would conduct alike to the prosperity of our country, and to the perpetuity of our political and religious freedom. —*Cultivator.*

Education, as a Preventive of Crime, has accomplished more than all the statutes ever enacted. In former times, the workhouse, the dungeon, or the scaffold, were held up *in terrorem* over the criminally disposed; but experience has taught us they were very inefficient barriers to the commission of crime. Since the more general diffusion of knowledge, which is in a great degree attributable to the cheap mediums through which it is distributed, the people have become convinced that the chief cause of all crime is *ignorance;* the more men are enlightened the more they are humanized; and the more we elevate the moral and strengthen the intellectual, the less shall we have for the jail or the gibbet. Although this country has done much, especially of late years, towards the improvement of the people by interposing education as a preventive to crime, yet to France must be conceded the palm of ability in investigating what may properly be termed *criminal statistizs.* The French minister of justice has recently submitted statements of the number of persons convicted of crimes of various kinds, from 1832 to 1836, distinguishing the utterly uneducated, the partially edueated, and those who have received some little education beyond mere reading and writing. Not having room for this document in detail, we give a brief abstract, as incontrovertibly establishing our position that education is the natural enemy of crime. Taking the yearly average of the criminals in France, as given in the statements alluded to, the account stands thus:—

Persons wholly untaught,	4471
" who can read and write indifferently,	2020
" " " " " " well	741
" " have been liberally educated	178

It is impossible to produce a stronger evidence of the important moral improvement to be derived from really well educating the people; it proves that the mere entering upon education has a good moral effect; it gives a different habit, and the number of criminals is diminished one half. Proceeding onward, the moral habit is still further improved and strengthened; reading well has so far improved the heart that the number of criminals who can read well is, to those who can read but little, only as about 1 to 4; and those who cannot read at all, only as about one to seven. But the fourth class, those who have been more liberally educated, who have been accustomed to think and reason, in whom knowledge has supplanted the ferocity and folly of untaught and unreclaimed nature; are, to the wholly uninstructed criminals, only as about one to twenty-eight! Never was there a more important document than this, if our public men, and more especially if public writers, correctly and energetically use it, it "tells" upon every point, and it tells with an absolutely gigantic power, it shows that if we cannot utterly annihilate, we may at least greatly diminish crime.—*N. Y. Sun.*